

Message

From: Matt Tonkin [matt@sspa.com]
Sent: 5/9/2018 4:05:32 PM
To: G D Beckett [g.d.beckett@aquiver.com]; Donald Thomas [dthomas@soest.hawaii.edu]; Grange, Gabrielle Fenix [Gabrielle.Grange@doh.hawaii.gov]; Ichinotsubo, Lene K [lene.ichinotsubo@doh.hawaii.gov]; Linder, Steven [Linder.Steven@epa.gov]; Shalev, Omer [Shalev.Omer@epa.gov]; TU, LYNDSEY [Tu.Lyndsey@epa.gov]; Whittier, Robert [Robert.Whittier@doh.hawaii.gov]
CC: Pallarino, Bob [Pallarino.Bob@epa.gov]
Subject: RE: Follow up items from today's 6 & 7 call

I second Gary on this. I have started going through the materials we have in hand now, and we are much better positioned than we were only a few weeks ago, to make some evaluations to help buttress our understanding of the system, and make some small predictions also. A key component for me, as it is for Bob and all of us, is understanding of those local flow conditions, and now at long last I think we have at least the bulk of the data we would need to attempt an assessment of that from a consistent data perspective. We can commence that tomorrow, and to your question – yes, the goal would be that in a matter of days we attempt (based in part on the work Bob has already performed, and then trying a couple things I have been pondering) to develop either our own fairly firm CSM on the local flow system, or we reach the honest conclusion that it is indeterminate at this time. That's ok, if we have to conclude that – to go to Gary's point in part, deterministic, highly confident/constrained answers aren't always possible, but in the words of Victor Klemes, as long as we acknowledge what we don't know, we are being honest and can still make decisions.

A call May 28th sounds good.

Matthew J. Tonkin
S.S. Papadopoulos & Assoc., Inc.
505 N. Pine St., Williamsfield, IL 61489-9517
Web: www.sspa.com // Email: matt@sspa.com // Skype: mattsspa
Office: (309) 616 9060 // Cell: (508) 815-9886

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From: G D Beckett [mailto:g.d.beckett@aquiver.com]
Sent: Wednesday, May 9, 2018 10:59 AM
To: Donald Thomas <dthomas@soest.hawaii.edu>; Grange, Gabrielle Fenix <Gabrielle.Grange@doh.hawaii.gov>; Ichinotsubo, Lene K <lene.ichinotsubo@doh.hawaii.gov>; Linder, Steven <Linder.Steven@epa.gov>; Matt Tonkin <matt@sspa.com>; Shalev, Omer <Shalev.Omer@epa.gov>; Tu.Lyndsey@epa.gov; Whittier, Robert <Robert.Whittier@doh.hawaii.gov>
Cc: Pallarino, Bob <Pallarino.Bob@epa.gov>
Subject: RE: Follow up items from today's 6 & 7 call

Hello Lyndsey,

I noticed in the new data sets from the Navy that they have a table with the parameter ranges they have compiled. Your request is spot-on, that is exactly the way we envisioned tracking the 25 or so simulations. To Bob's earlier point, I look at these as a framing of source/distance, not a requisite direction of implied gradient or transport. This will allow us to get ahead of the Navy's presentations and have a sense for the impacts already in-place. The evaluations will only address one small piece of the bigger puzzle, but it's an important one since the mass already present is adding flux to the system, so the system attenuative capacity is already under some load, meaning it

will buffer less than a pristine system relative to new potential releases. That & other aspects don't seem to be on GSI's radar.

To Bob's concerns and your note regarding water levels & gradients, my sense is we can put together a pretty good evaluation with all the available pieces we now have from the Navy. That would include evaluations of water levels combined with temps, geochem, isotopes, pumping regime, infiltration, etc. When combined, those should give us a much better view of the errors in the Navy's g.w. model and whether those errors are non-conservative as they appear to us now. This is another key piece to understanding the hydrogeologic behavior more thoroughly than the Navy team does or will otherwise admit to.

Finally, in looking at the volcanic eruption and its lava flows, it is clear again to me that while we can better understand the system probabilities, it is unlikely we will have an adequately deterministic set of models (NAPL & g.w.). There is far too much variability in depositional character to know with certainty the direction of LNAPL or g.w. flow (inclusive of percolation) on a discrete scale around each and every Red Hill tank and potential release source. Yet we must move forward carefully and conservatively in the face of these complexities and the reality of the TUA & AOC schedules. As Bob & Don have said, we need a lot more "show me" from the Navy as opposed to their telling us what they want us to believe.

Best regards

G.D. Beckett, RG, CHg

Principal Hydrogeologist

AQUI-VER, Inc.

6871 North 2200 West, 8F

Park City UT 84098

Wk - 435 655-8024

Fx - 435 655-8026

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>>> TU, LYNDSEY<Tu.Lyndsey@epa.gov> 5/8/2018 11:51 PM >>>

Hi Matt,

Thanks to you and Gary for pulling this together! I am overall in agreement with the brief plan you provided, and I am hopeful that there was at least some useful geologic information in the data files that were recently shipped out. I'm actually in Las Vegas for training this week so folks in the EPA office may have additional comments to add to the proposal provided.

My additional requests are that you would track and present with your results a single table with the major parameter change(es) for each run you complete. It doesn't need to be fully interpretative, just descriptive enough to improve our understanding of the types/ranges of parameters considered. This would be something that I would anticipate being updated with additional future runs, if applicable.

I'd also like to know if it is realistic between your schedules to pull a significant amount of this work together before the June face to face meetings. That would likely mean briefing us the week of May 28th, which is quite soon. If not, it would be most valuable to have some more perspective on the hydraulic gradient without the NAPL component by the week of the 28th. Let us know what you can fit into your schedules.

I'm available at noon pacific both 5/9 and 5/10 if anyone feels the need to discuss this over the phone.

Thanks,

Lyndsey Tu

Underground Storage Tanks Program

Land Division, U.S. EPA Pacific Southwest

From: Matt Tonkin [mailto:matt@sspa.com]

Sent: Tuesday, May 08, 2018 10:49 AM

To: TU, LYNDSEY <Tu.Lyndsey@epa.gov>; Grange, Gabrielle Fenix <Gabrielle.Grange@doh.hawaii.gov>; Ichinotsubo, Lene K <lene.ichinotsubo@doh.hawaii.gov>; Shalev, Omer <Shalev.Omer@epa.gov>; Whittier, Robert <Robert.Whittier@doh.hawaii.gov>; G D Beckett <g.d.beckett@aquiver.com>; Donald Thomas <dthomas@soest.hawaii.edu>; Linder, Steven <Linder.Steven@epa.gov>

Subject: RE: Follow up items from today's 6 & 7 call

Lyndsey:

Thanks for the summary, I think this captured the main items well.

Gary and I have worked up a short description of some calculations that were described on the call, to get an independent sense of transport in the subsurface. I am attaching it here for your consideration. Again, the goal would be to start getting our own sense of migration rates and also of attenuation, so that we can more explicitly critique and respond to Navy presentations, with some actually quantitative calculations as back-up. It would be invaluable to discuss the parameter ranges that should be considered in any calculations together with Bob and Don, particularly given that Bob already provided a nice example of the non-uniqueness and sensitivity of the relation between gradients and flow rates, migration.

Gary and I would greatly appreciate any thoughts you have on the attached.

Matthew J. Tonkin

S.S. Papadopoulos & Assoc., Inc.

505 N. Pine St., Williamsfield, IL 61489-9517

Web: www.sspa.com // Email: matt@sspa.com // Skype: mattsspa

Office: (309) 616 9060 // Cell: (508) 815-9886

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From: TU, LYNDSEY [mailto:Tu.Lyndsey@epa.gov]

Sent: Friday, May 4, 2018 7:24 PM

To: Grange, Gabrielle Fenix <Gabrielle.Grange@doh.hawaii.gov>; Ichinotsubo, Lene K <lene.ichinotsubo@doh.hawaii.gov>; Shalev, Omer <Shalev.Omer@epa.gov>; Whittier, Robert <Robert.Whittier@doh.hawaii.gov>; G D Beckett <g.d.beckett@aquiver.com>; Matt Tonkin <matt@sspa.com>; Donald Thomas <dthomas@soest.hawaii.edu>; Linder, Steven <Linder.Steven@epa.gov>

Subject: Follow up items from today's 6 & 7 call

Hi All,

Thanks for being on the call today, I wanted to follow up with a snippet from the key issues we covered and action items we agreed to while they're still fresh in my mind.

Key Issues Discussed:

- Disagreement with base model and it's assumptions about gradient. *We have copious comments on this from previous meetings, working on translating this into an action item to independently examine the data.*
- Issues with the assumptions from the release scenario / NSZD projections the Navy made. *See comment above.*
- Possible Tracer Study. *Decided to postpone discussion until more work is completed.*
- Database management and unified data management strategy. *We all acknowledge this is important, we need to decide who, how and where this happens.*
- RHMW11 CWRM Request to HDOH. *We believe the Navy has the data necessary to address the major BWS questions, they just need to re-examine.*
- Letter regarding October 2017 TPH-D results. *EPA and Lene discussed this after the call.*

Action Items:

- Matt and Gary will put together a short description of level of effort for pulling together some independent analysis for top two bullets above by COB Tuesday.
- EPA / DOH will have a separate discussion about data management, time TBD.
- Lyndsey will follow up with Navy about status of petrographic analysis
- Lene and Steve Linder will encourage Navy to quickly respond to BWS comments on RHMW11 on Monday PC call. Will see what additional follow up is needed, but this is the first action that needs to take place.
- DOH is drafting the response to TPH letter, EPA offers any assistance that may be needed.

This is just a list from my notes, so please add on if something was missed. Much of the technical detail supporting these actions was captured in the pre-meeting notes and comments pulled together by others. Thanks for making the time for our call today and for preparing your thoughts in advance so we could get to these actions so quickly.

Hope you have a nice weekend,

Lyndsey Tu
Underground Storage Tanks Program
Land Division, U.S. EPA Pacific Southwest
Tu.Lyndsey@epa.gov | 415-972-3269